BIOGRAPHICAL SKETCH

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NAME Eugenio Martinelli	POSITION TITLE Full Professor, University of Rome Tor Vergata
ERA COMMONS USER NAME (credential, e.g., agency login) emartinelli	

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
University of Rome “Tor Vergata”, Italy	Electrical Engineering	1999	Electrical Engineering
University of Rome “Tor Vergata”, Italy	PhD	2000-2003	Artificial olfaction and Data Analysis
University of Rome “Tor Vergata”, Italy	Postdoctoral	2004-2008	Artificial olfaction for Space and Medical Application
University of Rome “Tor Vergata”, Italy	Assistant Professor	2008-2014	Electronic interfaces, Medical Applications, chemical sensors.
University of Rome “Tor Vergata”, Italy	Associate Professor	2015-2022	Electronic interfaces, Medical Applications, Chemical sensors, pattern recognition and Machine Learning, Lab on chip devices.
University of Rome “Tor Vergata”, Italy	Full Professor	2022-present	Electronic interfaces, Medical Applications, Machine learning, Lab-on-chip, and Organ on chip devices.

A. Personal Statement

He graduated with honors in Electronic Engineering in 1999 at the University of Rome Tor Vergata, with a thesis entitled “Project and realization of a multisensory system for the identification of lung cancer” and in 2003 he received his doctorate in artificial sensorial systems and learning at the same university with a thesis entitled “Investigation on alternative approaches to chemical sensors data treatment”. In 2002 and 2003, during his doctorate, He was a “visiting Ph.D. student” [Marie Curie Fellowship] at Linkoping University in the group of Professor Lundstrom.

From 2004 to 2008 he worked at the Department of Electronic Engineering of University of Rome Tor Vergata as a postdoc. From October 2008 to 2014 he was an assistant professor at the university faculty of engineering at the same university. Since 2015 he has been an Associate Professor in the same department. His activity is mainly focused on sensor and sensorial system development, pattern recognition algorithms, Lab-on-chip, and their application in medical, industrial, and space scenarios. He is the author of more than 270 publications in international journals and congresses (with more than 6000 citations and an H index equal to 43) and seven patents.

In 2000, he won the call for the 'Young Researchers project' at Tor Vergata University. In 2005 he was responsible for two scientific projects, 'Hearth Beat Monitoring' and 'Electronic Nose Monitoring' for the ENEIDE Space Mission. In 2006, he was the scientist responsible for the project “Electronic Nose” funded by the Italian Space Agency. In 2010, he was the scientist responsible for the experiment “Italian Electronic Nose for Space Exploration (IENOS)” in the ST-134 Space Shuttle mission, where a network of electronic noses was utilized to monitor the air quality in the International Space Station.

In 2016 he won the EUROSENSORS Fellowship Award for outstanding contribution in the field of signal processing and data analysis in the sensor field. He held various keynote presentations at national and international conferences. Since 2020, he has been a co-director of the Interdisciplinary Center of Advanced Study of Organ-on-chip and Lab-on-Chip applications.

B. Positions and Project role.

2005: *Principal Investigator (PI) and Principal Developer of two experiments (Electronic Nose Monitoring, **ENM**, Heart Beat Monitoring, **HBM**) in the space mission ENEIDE.*

2006: Scientific responsible for the project "Electronic Nose" funded by the Italian Space Agency.

2008: Invited speaker to the Gospel Summer School" organized by the Network of Excellence on olfaction GOSPEL.

2010: Principal Investigator (PI) and Principal Developer of the experiment Italian Electronic Nose for Space Exploration (IENOS) in the space shuttle mission STS-134 "DAMA".

2011-2013: Principal Investigator (PI) for the project "Study of the VOCs associated to the cancer cell proliferation with a gas sensor array" funded by "Veronesi Foundation".

2014-2015 Co-PI of a grant of the National Institute of Health (NIH), USA (2014): 1R21AI105611-01A1, "Determination of Exhaled Biomarkers for Low-Cost Diagnosis and Monitoring of Tubercolisis".

2016-2019: Work Package Leader of a H2020 European project project "Portable photonic miniaturised smart system for on-the-spot food quality sensing **(PHASMAFOOD**) (H2020-ICT-2016-1 – RIA."

2018: Co-PI: *Trust Board Grant: "**MONITOR**: A Self-Reparable Memristive Gas Sensor Array".*

*2018-2019 Co-PI of the project "**C3PO** – objeCtive Post-surgical Pain assessment PlatfOrm" funded by Lazio Region.*

2020-now Co-director of Interdisciplinary Center of Advanced Study of Organ-on-chip and Lab-on-Chip applications

*2021-2023 PI of the project "multidisciplinary Platform for NEuRodegenerative diSeases drug tEsting On-chip (**PERSEO**)" funded by Lazio Region.*

*2023-2025 PI of the project "Sarcopenia-on-chip: an integrated platform based on chemical sensors, microfluidic devices, and machine learning algorithms for the development and testing of personalized treatment for sarcopenia disease (**SELENE**)" funded by the Italian Minister of Research and University (MUR,PRIN)*

*2024-2026 co-PI of the project "**AI-HEART**: AI-guided generation of beating and sensing heart-on- chip for drug screening" funded by the Italian Minister of Research and University (MUR,PNRR-PRIN).*

*2024-2028 WP Leader, **ARTURO**: "Assessing the role of intratumoral microbiota in therapy responses using patient-derived tumor-on-chip" – Funded by Horizon Europe*

*2024-2026- CoPI, Artificial intelligence and compUtational biology for pRedicting nOvel immunotheRApeutic strategies in microsatellite stability colon cancer patients – **AURORA**, PNRR: M6/C2_CALL 2023.*

Expert advice:

2002-now : *reviewer of main scientific journals on sensors and its application (Sensors And Actuators B, IEEE Sensors Journal, etc..)*

2008-now: *reviewer of the International Symposium of Chemical Sensors (IMCS)*

2010-now: *reviewer of the World Conference on Computational Intelligence (WCCI)*

2012-now: Editorial Board Member of Journal of Sensors (IF 2.057)

2016-now: Associate Editor, Nanomaterials and Nanotechnology, ed. Intech (IF 1.1)

2017-now Editorial Board Member of Scientific Reports (Nature Pub., IF 4.011)

2018: Guest Editor of Special Issue of "Sensors" (IF 3.31) on the topic "Artificial Olfaction and Taste"

2018 –now Editorial Board Member of Internet of Things (Elsevier pub).

2020- now member of Scientific Committee of Fondazione Unicusano

Honors and Awards

2000: Award as Young Scientific Research (University of Rome Tor Vergata)

2002: PhD Student Marie Curie Fellows (University of Linkoping, Sweden)

2016: Eurosensors Fellowship Award.

2021: Vebleo Fellow Award.

Main International Scientific Collaborations

- Prof. G. Galizia, Dept. Neuroscience, University Konstanz (Germany). This collaboration aims to develop a bioinspired sensorial system based on Drosophila Melanogaster olfactory receptors.
- Prof. E. Llobet, University of Tarragona, (Spain). This collaboration aims at developing an algorithm to improve the performance of the temperature-modulated gas sensor array.
- Prof. D. Schild, Department of Neurophysiology and Cellular Biophysics University of Göttingen (Germany). The aim of this collaboration is the development of processing strategy for chemical sensor signals based on biological olfactory circuits
- Dr. N. Zetola, University of Pennsylvania (USA). The aim of this collaboration is the development of a sensorial system aimed at the identification of tuberculosis by breath analysis.
- Prof. G. Kroemer, Université Pierre et Marie Curie, Paris, France. The collaboration with the group of Prof. Kroemer is to develop algorithm and image processing strategies for the analysis of microfluidic devices.
- Dr. M.C. Parrini, Institut Curie - Section de recherche, Paris, (France). The development of novel descriptors of cell behaviors from cell trajectories obtained with the time lapse microscopy.
- Prof. M. Kersaudy-Kerhoas, Heriot-Watt University, School of Engineering and Physical Sciences, Edimburg, Scotland, UK. Design and fabrication of microfluidic devices and sensors for medical applications based on innovative materials.
- Prof. J. Samitier, Institute of BioEngineering of Barcelona (IBEC, Spain). Design and fabrication and data analysis measurements of novel organ-on-chip devices for medical applications.
- Prof. S. Neale, James Watt School of Engineering, University of Glasgow, UK. Development of Opto-Electronic tweezers for biomedical applications.

Scientific Societies Membership and Related Activities:

2011-now Member of the IEEE Task Force on Computational Intelligence for Chemometric and Chemical Sensing

2011-now Member of the scientific committee of the National Conference on Sensors

2015-now Member of the Scientific Technical program committee of the International Symposium of Olfaction and Electronic Nose (ISOEN)

2020-now Co-director of Interdisciplinary Center of Advanced Study of Organ-on-chip and Lab-on-Chip applications

2022-now Vice-President of the Italian Society of Organ-on-Chip

Rome 10/1/2025

Eugenio Martinelli